

art reference." See, M.P.E.P. §2131 citing Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicant respectfully submits the cited art fails to teach or suggest each of the recited limitations of any of the Claims – and hence fails to anticipate any of the pending Claims.

1. Little Fails to Anticipate Claim 1

In the Office Action, the Examiner states that “oxygen ions would inherently form in all areas of the glass when field assisted bonding is used, including at the intersection of the channels.” Claim 1, as amended, recites, inter alia, “a plurality of channels, located between said glass and silicon interface, defining a plurality of reaction sites where said channels intersect and having dangling bonds formed preferentially at said reaction sites. . .” It is clear that Little neither teaches nor suggests reaction sites, nor reaction sites having dangling bonds formed preferentially. Even assuming arguendo, that the Examiner is correct that the use of field assisted bonding in a vacuum or inert atmosphere would inherently result in the formation of some dangling bonds, such dangling bonds would be formed uniformly, and in any event would not be formed preferentially at reaction sites where channels intersect.

Accordingly, Applicant respectfully requests reconsideration and removal of the rejection of Claim 1 in view of Little.

2. Little Fails To Anticipate Claims 2-4, 6-11 and 18-19

Applicant respectfully requests reconsideration and removal of the rejections of Claims 2-4 and 6-11, as well, at least by virtue of these Claims’ ultimate dependency upon a patentably distinct base Claim 1.

In similar fashion, independent claim 18 analogously recites borosilicate glass having dangling bonds formed preferentially at intersections of at least two channels and providing localized reaction sites for receiving organic molecules recited to be fabricated into a nanoscale molecular system. Little neither teaches nor suggests the above cited features and limitations of present Claim 18.

Reconsideration and removal of this rejection is requested. Applicant also respectfully requests reconsideration and removal of the rejection of Claim 19, at least by virtue of this claim's ultimate dependency from a patentably distinct base Claim 18.

3. Little Fails To Anticipate Claim 20

Independent Claim 20 recites, "An apparatus for fabricating nanoscale molecular systems, comprising: ... at least one edge protruding into at least one of said channels and being suitable for inducing a localized high electric field." The Examiner has stated with respect to Claim 20 that Little discloses all of the same structural elements made up of the same materials and therefor would inherently be capable of producing a high electric field when a voltage is applied to the structure. However, Little utterly fails to disclose the claimed "at least one edge protruding into at least one of said channels" and thus does not disclose the claimed structure. Furthermore, Little does not disclose or suggest such an edge "suitable for inducing a localized high electric field." Indeed, while the Office Action states that the elements would inherently be capable of producing a high electric field when a voltage is applied, it is only as a result of the claimed structure, namely "at least one edge protruding into at least one of said channels," that a localized high electric field is produced. Little nowhere teaches a structure for producing a localized high electric field.

4. Claims 5, 12, 13, 16 and 17 Are Patentable over the Combination of Little and Ashmead.

The rejection of claims 5, 12, 13, 16 and 17 over Little in view of Ashmead is respectfully traversed for at least the reason that one of ordinary skill in the art would not modify a micro miniature cryogenic device (i.e. refrigerator), as taught by Little, with features from a chemical processing apparatus as taught by Ashmead. In addition, the rejection is respectfully traversed on the grounds that each of claims 5, 12, 13, 16 and 17 depends from claim 1, which is allowable for at least the reasons set forth above.

5. Claim 17 Is Patentable over the Combination of Little, Ashmead and Christl, et al.

The rejection of claim 17 over the proposed combination of Little, Ashmead and Christl is traversed for at least the reasons that one of ordinary skill in the art would not be motivated to modify a micro miniature cryogenic device of Little using the teachings of Christl related to providing a corrosion-resistant coating for use in heat exchangers that may be exposed to highly corrosive storable liquid rocket fuels (col. 1, lines 33-36). In addition, the rejection is respectfully traversed on the grounds that claim 17 depends from claim 1, which is allowable for at least the reasons set forth above.

6. Claims 14 and 15 Are Patentable over the Combination of Little in view of Robillard, et al.

The rejection of Claims 14 and 15 over the proposed combination of Little and Robillard is traversed for at least the reasons that claims 14 and 15 depend from claim 1, which is allowable for at least the reasons set forth above.

CONCLUSION

Applicant believes he has addressed all outstanding grounds raised in the outstanding Office action, and respectfully submits the present case is in condition for allowance, early notification of which is earnestly solicited.

Should there be any questions or outstanding matters, the Examiner is cordially invited and requested to contact Applicant's undersigned attorney at his number listed below.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Edward J. Howard', is written over a horizontal line.

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